

## CHAPTER IV-4

## SOURCE CONTROL BMPs

## INTRODUCTION

Source control BMPs are organized by the activities found on the checklist in Chapter IV-1. Each of these BMPs include several different ways to improve runoff quality. Specific recommendations for each business are not made since the activities for each vary widely. The local government will make the final decision on appropriate BMPs for each business.

If possible, a pollution-creating activity should be altered to one which does not cause pollution. If the activity cannot be changed, then it should be enclosed. If it is too expensive to enclose the entire area, then perhaps the activity can be covered with just a frame and a roof. This area should also be provided with an impervious surface and drained to the sanitary sewer, process treatment or to a dead-end sump according to either local Sewer Authority or other permit requirements.

## IV-4.1 BMP S1.10 FUELING STATIONS

In addition to general service gas stations, fueling may also occur at 24-hour convenience stores, construction firms, warehouses, car washes, and businesses with fleet vehicles. Fueling also occurs at port facilities and industrial complexes where mobile equipment is used. Fuels contain organic compounds and metals that adversely affect aquatic life.

IF FUELING IS DONE ON-SITE, WHETHER AT A GAS STATION OR OTHER FUELING AREA,  
THE FOLLOWING BMPs ARE REQUIRED

1. The fueling facility shall be built in compliance with the Uniform Fire Code and the National Electric Code.
2. The fuel island shall be paved using Portland cement concrete, not asphalt and be designed to contain fuel spills. The fuel island shall be designed as a spill containment pad and sized to prevent the runoff of spilled fuel and the runoff of stormwater from surrounding pavement. Parking lot stormwater shall be discharged to the stormwater drainage system, not the sanitary sewer.
3. Liquids spilled on the fuel island shall be collected in drains; either trench drains or catchbasins. The pad shall be sloped towards the drains. The drain(s) shall be connected to the sanitary sewer, process treatment or a dead-end sump. To comply with the requirements of the local Sewer Authority and the Uniform Fire Code (R.1 and R.2 in Chapter IV-5) the drain shall have a valve to allow shutoff in the event of a large fuel spill.
4. The fuel island shall be covered to prevent the direct entry of precipitation onto the spill containment pad (see Figure IV-4.1). The roof/canopy shall, at a minimum, cover the spill containment pad and preferably extend several additional feet to prevent windblown rain from entering.
5. Spills should be prevented whenever possible. The owner or operator shall develop an emergency spill cleanup plan (per BMP S1.80) and have responsible designated person(s) available either on site or on call at all times. Suitable cleanup materials shall be kept on site to allow prompt cleanup should a spill occur.
5. Educate employees and customers on the proper use of fuel dispensers. Post signs in accordance with the Uniform Fire Code. Post "No Topping Off" signs;

topping off gas tanks causes spillage and vents gas fumes to the air. Make sure that the automatic shutoff on the gas nozzle works.

6. Temporary fuel tanks used to fuel vehicles in the field shall be placed in a bermed, impervious (using heavy mil plastic or portland cement) area. The bermed area shall be large enough to contain the greater of: 10% of the total enclosed combined tank volume or 110 percent of the largest tank's volume.

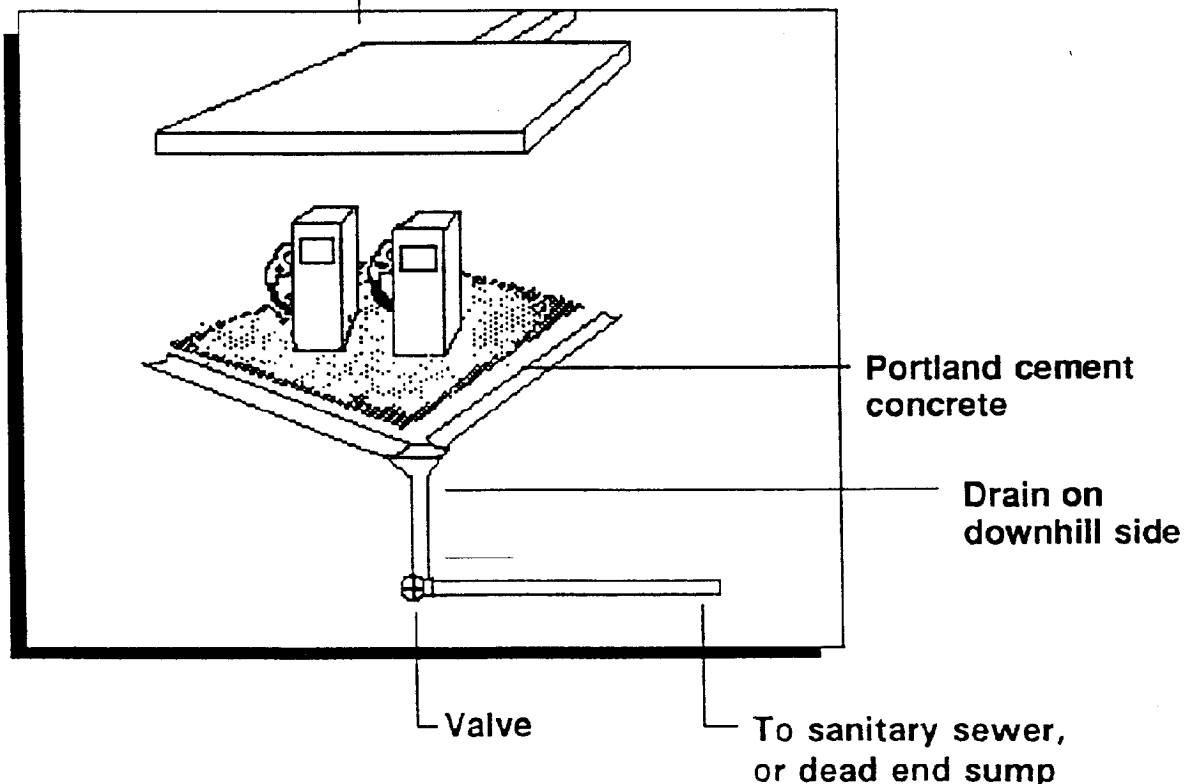
#### Exceptions

In industrial complexes or port facilities where very large mobile equipment is used such as log loaders, the fuel island need not be covered. However, the pad must be designed in a manner that prevents the run-on of stormwater from adjacent areas. The pad must also be designed in a manner that allows the collection of all rain that falls on the pad.

See BMP S1.30 for information on the transfer of fuels from a tanker to the fuel storage tanks and BMP S1.40 regarding the installation of the tanks.

#### IV-4.1 Details of Fuel Island

Covered fuel island



## IV-4.2 BMP S1.20 VEHICLE/EQUIPMENT WASHING AND STEAM CLEANING

If vehicle and/or equipment washing or steam cleaning is done on premises, the following measures are required.

Washing of highway vehicles, equipment and parts such as construction equipment, shall occur in a building or in a designated area such as that described below. This requirement refers to all methods of washing in which water is used including low-pressure water, high-pressure water and steam.

Wash water from cleaning activities contains significant quantities of oil and grease, suspended solids, heavy metals, and organics, as well as pollutants from the detergents.

Oil/water separators tend to be ineffective because the surfactants in detergents chemically stabilize free and dispersed oil.

## GENERAL REQUIREMENTS

Wash water from vehicle and equipment cleaning shall be discharged to the sanitary sewer. All requirements of the local Sewer Authority and/or other permit requirements must be met prior to discharge. The owner shall conduct washing in one of the following locations in order of preference:

1. At a commercial washing business in which the washing occurs in an enclosure (see Chapter IV-2, "Car and Truck Washes") and drains to the sanitary sewer or;
2. Inside the owner's vehicle or equipment building which is plumbed to drain to the sanitary sewer or;
3. In a building the owner has constructed specifically for washing of vehicles and equipment which is plumbed to drain to the sanitary sewer or;
4. In an outside area without walls and/or roof designated by the vehicle owner as a wash area, meeting the requirements outlined below.

The use of mobile wash services is not allowed unless the wash water can be contained and discharged to a sanitary sewer per the requirements of the local Sewer Authority or discharged into and be treated by a closed-loop recycling system. Exceptions to these General Requirements are noted below.

## REQUIREMENTS FOR UNCOVERED WASH AREAS

A wash area without walls and/or roof is the least desirable option. Building roofs and walls prevent entry of precipitation, and walls contain wash water. These standards are designed to prevent release of petroleum compounds and metals into the environment and minimize the discharge of precipitation to the sanitary sewer. If the owner chooses to conduct washing operations in an outside area the owner shall establish a designated wash area with the following features:

1. Paved, preferably with portland cement, and constructed as a spill containment pad to prevent the run-on of stormwater from adjacent pavement areas. The spill containment area shall be graded so that all water is collected in a containment pad drain system. The drain system may be perimeter drains, trench drains or catchment drains. The containment pad shall be sized to extend out a minimum of four feet on all sides of the vehicles and/or equipment being washed.

2. All wash water shall discharge to the sanitary sewer, process treatment or a dead-end sump. All requirements of the local Sewer Authority and/or other permit requirements must be met prior to discharge;
3. The discharge shall be treated by one of the following methods:
  - Pass through an SC-type (spill control) oil/water separator (or an API or CPS oil/water separator as directed by the local Sewer Authority) and shall comply with the pre-treatment requirements of the local Sewer Authority (R.1 in Chapter IV-5). Although the detergents in the wash water will tend to disperse the oil, a well-maintained SC-type oil/water separator will protect against deliberate dumping. A positive control valve is required (see #4 below).
  - Discharge to a containment sump with a positive control valve (see #4 below), live containment volume and overflow with oil/water separation. The minimum live storage volume shall be sized for the 6-month, 24-hour storm for the area of the containment pad.
4. The discharge pipe shall have a positive control valve that is shut when washing is not occurring, thereby preventing the entry of stormwater. This valve may be manually operated but a pneumatic or electric valve system is preferable. Signs shall be posted to inform people of the operation and purpose of the valve. The valve may be on a timer circuit; where it is opened upon completion of a wash cycle. The timer would then close the valve after the sump or separator is drained. The recommended time period for the timer would be the time required to drain the sump live storage at the design oil/water separator inflow rate from the sump.
5. In areas where the wash water cannot be discharged to a sanitary sewer, wash water should be collected in a dead-end sump, tank, or other device and transported to the nearest sanitary facility for proper disposal.
6. A portland cement spill containment pad is recommended for steam cleaning.
7. The wash area shall be well marked at gas stations, multi-family residences and any other business where vehicles may be washed by non-employees. Included in the posting will be a statement forbidding the changing of oil in the wash area. The location of the nearest oil recycling facility should be posted. See Figure IV-4.2 for an illustration of these requirements.

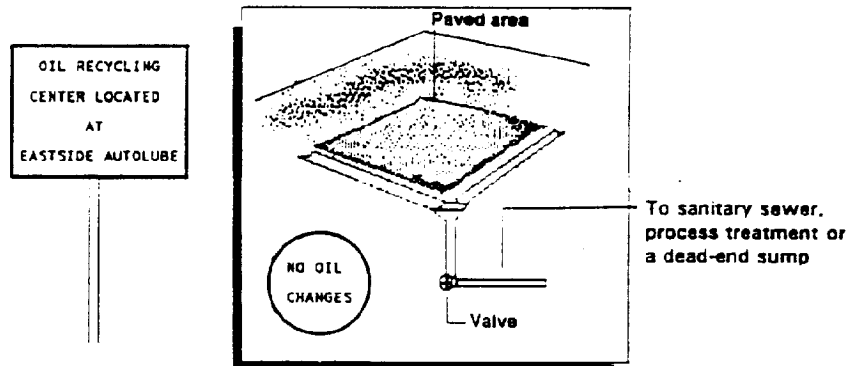
#### EXCEPTIONS

1. At existing gas stations where it is not possible to have the designated area discharge to a sanitary sewer, the station can, whenever extensive vehicle washing is occurring (such as washing cars to raise charity funds), place a temporary plug in the storm drain and pump the accumulated water to the nearest sanitary sewer.

Local governments can help this solution by making the equipment available and obtaining the approval of the local Sewer Authority if the sewers are not owned by the local government responsible for the public storm drains.
2. Dealerships of new and used automobiles or trucks may wash the vehicles in the parking stalls as long as only water is used. Soaps, detergents and cleaners shall not be used. Soaps, detergents and cleaners are all "biodegradable" to a certain extent, but the word "biodegradable" has no legal definition in this state. As a result, manufacturers can make claims which in some cases may be misleading. The dealership can also use the temporary plug system outlined above for gas stations.

3. Truck washes at industrial sites which are used to prevent the tracking of dirt, sediment and floatable materials such as wood, onto public streets can discharge to the storm drain. However, the wash water shall pass through a catchbasin and oil/water separator. Soaps and other cleaners shall not be used if the wash water is discharged to the storm drain.

Figure IV-4.2 Requirements for an Uncovered Wash Area



**IV-4.3 BMP S1.30 LOADING AND UNLOADING LIQUID MATERIALS**

If loading or unloading occurs of liquids in containers or direct liquid transfer occurs, then the following BMPs apply.

Consistent with Uniform Fire Code requirements (R.2 in Chapter IV-5) and to the extent possible, unloading or loading of liquids should occur in the manufacturing building so that any spills that are not completely retained can be discharged to the sanitary sewer, process treatment or a dead-end sump consistent with local Sewer Authority and permit requirements.

Practices are described below for areas where loading is done outside and loss to storm drains could occur.

**CONTAINED LIQUIDS AT LOADING AND UNLOADING DOCKS**

1. Loading/unloading docks shall have overhangs or door skirts that enclose the trailer end (see Figures IV-4.3 and IV-4.4).
2. The loading/unloading area is to be designed to prevent run-on of stormwater.
3. The owner shall retain on site the necessary materials for rapid cleanup of spills (see BMP S1.80).

**RAIL TRANSFER TO ABOVE/BELOW-GROUND STORAGE TANKS**

1. To minimize the risk of accidental spillage, the owner shall have a written "operations plan" that describes procedures for loading and/or unloading. Employees shall be trained in its execution and it shall be posted or otherwise made easily available to employees.
2. As a part of the operations plan, or as a separate document, the owner shall have an Emergency Spill Cleanup Plan (BMP S1.80).
3. Drip pans shall be placed at locations where spillage may occur such as hose connections, hose reels and filler nozzles. Drip pans shall always be used when making and breaking connections (see Figure IV-4.5).
4. A drip pan system as illustrated shall be installed within the rails to collect spillage from tank cars (see Figure IV-4.6).
5. An employee trained in spill containment and cleanup shall be present during loading/unloading.

Figure IV-4.3 Dock With Door Skirt

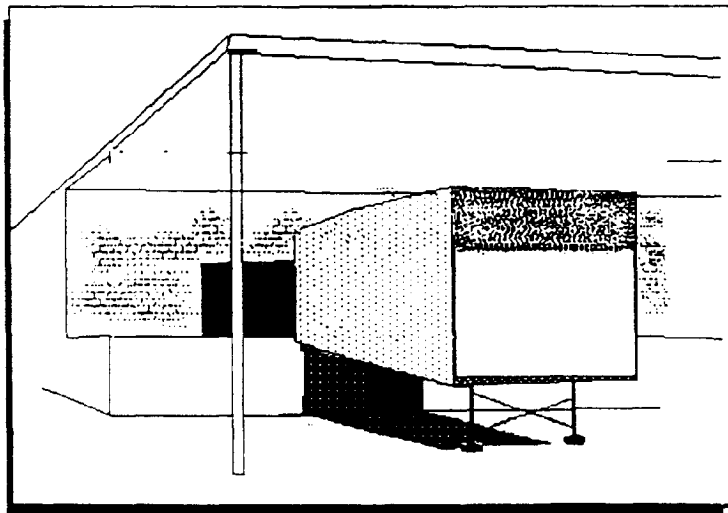
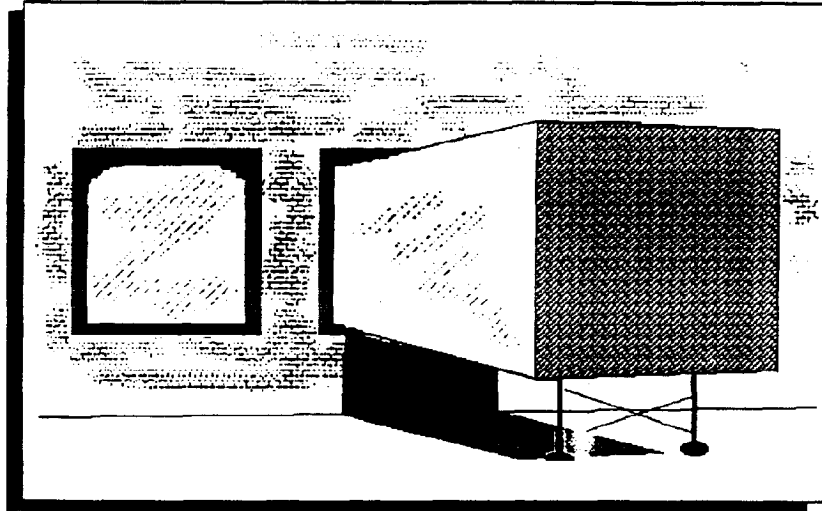


Figure IV-4.4 Dock With Overhang

Figure IV-4.5

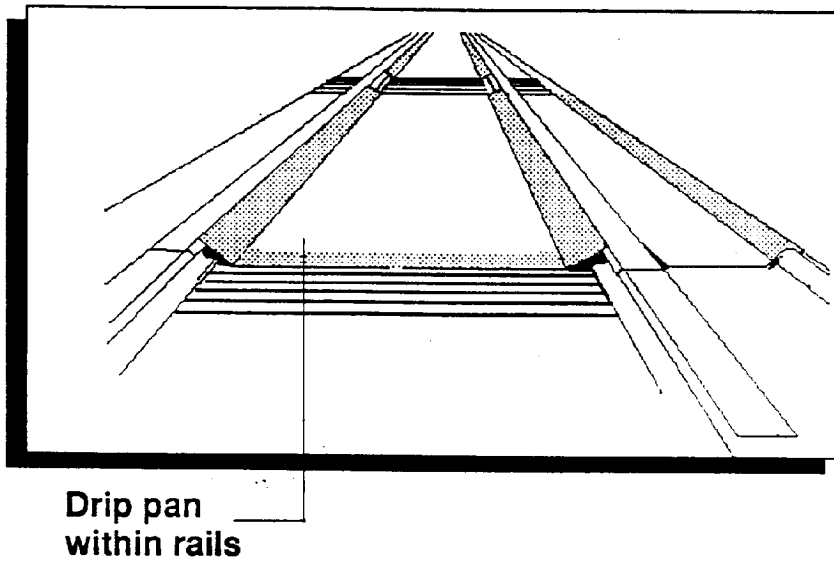
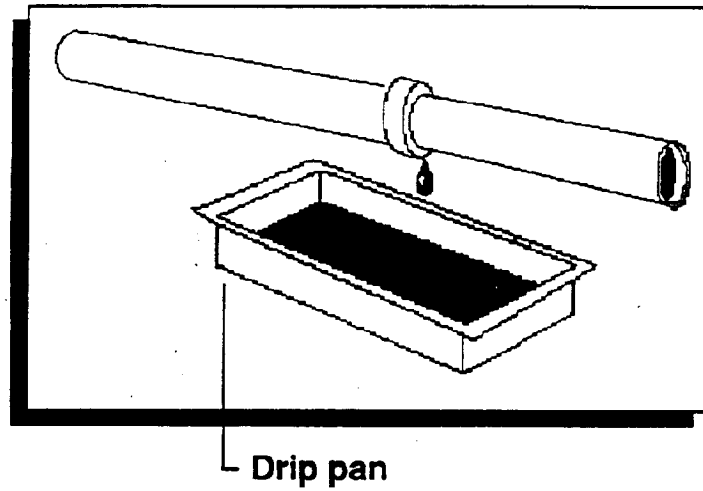


Figure IV-4.6



**TANKER TRUCK TO ABOVE/BELOW-GROUND STORAGE TANKS**

1. To reduce the risk of spills, the owner shall have a written "operations plan" describing procedures for loading and/or unloading. Employees shall be trained in its execution.
2. The operations plan will include an emergency spill cleanup plan. (BMP S1.80). Cleanup materials shall be readily available and employees will be trained in their use.
3. The area on which the transfer takes place shall be paved. If the liquid is reactive with asphalt (for example, gasoline) Portland cement concrete shall be used to pave the area.
4. The transfer area shall be designed to prevent the run-on of stormwater from adjacent areas. This may be achieved by sloping the pad and surrounding area in a appropriate manner, or with a small, flattened curb (like a small speed bump) around the "uphill" side of the transfer area;
5. The transfer area shall be designed to prevent the runoff of any spilled liquids from the area. This can be accomplished by sloping the area to a drain. The drain shall be connected to a dead-end sump or to the sanitary sewer subject to the requirements of the local Sewer Authority. For the latter two situations, a positive control valve shall be installed.
6. If the transfer area is connected to the sanitary sewer, a spill containment sump should be installed between the spill containment pad and the sewer connection. The sump should be large enough to include 50 gallons of storage space, grit sedimentation volume and a manual drain shut-off valve. Instructions in its use should be prominently posted. Alternatively, an API or CPS oil/water separator sized for a 15 minute retention time at the greater flow rate of the: greatest fuel dispenser nozzle through-put rate of the peak flow rate of the 6-month, 24-hour storm event over the surface of the containment pad.
7. Drip pans shall be placed at locations where spillage may occur such as hose connections, hose reels and filler nozzles. Drip pans shall always be used when making and breaking connections (see Figure IV-4.5).

**LOADING AND UNLOADING FROM OR TO MARINE VESSELS**

Facilities and procedures for the loading or unloading of petroleum products must comply with Coast Guard requirements (R.5 in Chapter IV-5).

**TRANSFER OF SMALL QUANTITIES FROM TANKS AND CONTAINERS**

See BMPs S1.40 and S1.50 for requirements on the transfer of small quantities from tanks and containers, respectively.

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**IV-4.4 BMP S1.40 LIQUID STORAGE IN ABOVE-GROUND TANKS**

Any business which stores liquids in above-ground tanks shall comply with the following practices.

Storage of reactive, ignitable, or flammable liquids must comply with the Uniform Fire Code (R.2 in Chapter IV-5). The following practices are to complement, not conflict with the Uniform Fire Code. Below-ground tanks shall comply with Ecology requirements (R.6 in Chapter IV-5).

**PERMANENT TANK STORAGE**

1. The tank shall include an overfill protection system to minimize the risk of spillage during loading.
2. Permanently installed tanks shall be surrounded by dikes as illustrated in Figure IV-4.7. The dike shall be of sufficient height to provide a volume that is the greater of either 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank.
3. The dikes and the surface within the dike area shall be sufficiently impervious to prevent loss of the stored material in the event of spillage.
4. Outlets from the tank area shall have positive control to prevent uncontrolled discharge from the tank area of spilled chemicals or petroleum products.
5. The outlet shall have a dead-end sump for the collection of small spills. It shall be cleaned weekly to minimize the potential for contamination of stormwater and/or ground water.
6. During the wet season, accumulated stormwater shall be released frequently.
7. For petroleum tank farms, the stormwater shall pass through an API or CPI-type oil/water separator (BMP RD.35, Volume III, Runoff Control).
8. If a tank is to be located in an area where firearms may be discharged, concrete encapsulation (or equivalent) should be used to protect the inner tank.
9. Tanks should be guarded against vehicles through the use of bollards or traffic barriers.
10. All installations shall be done per the Uniform Fire Code and the National Electric Code.
11. Double walled tanks do not need containment systems. All double-walled tanks should be UL approved.

**SMALL PORTABLE TANK STORAGE**

Where portable, double-hulled tanks are used to contain fuels for servicing vehicles, a diking system as described above need not be used.

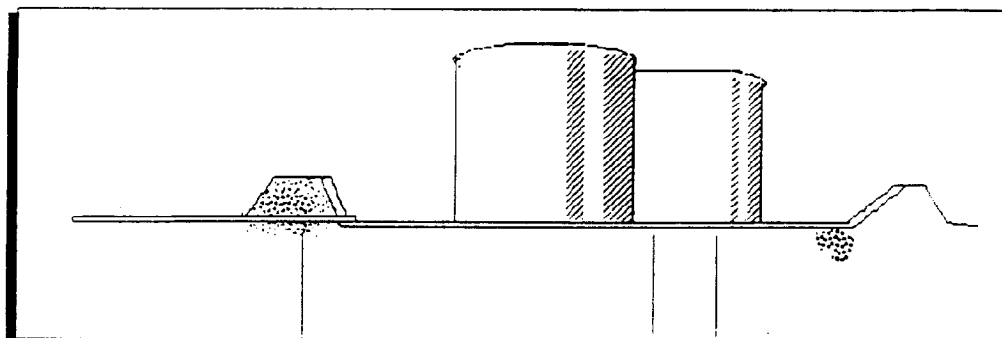
1. A secondary containment system (or equivalent) similar to that shown shall be used whenever liquids are temporarily stored in a portable tank (see Figure IV-4.8).
2. The containment system should be a bermed impervious area (using either heavy mil plastic or portland cement). The minimum storage volume shall be 100% of the total tank volume.

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3. If a tank is to be located in an area where firearms may be discharged, concrete encapsulation (or equivalent) should be used to protect the inner tank.
4. Tanks should be guarded against vehicles through the use of bollards or traffic barriers.
5. All tank installations should be per the Uniform Fire Code and the National Electric Code.

Figure IV-4.7 Above-Ground Tank Storage

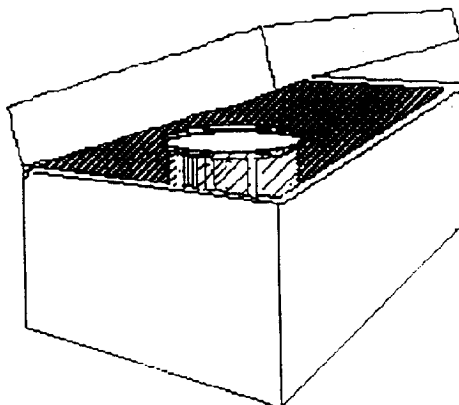


The dike shall provide a volume that is the greater of either 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank.

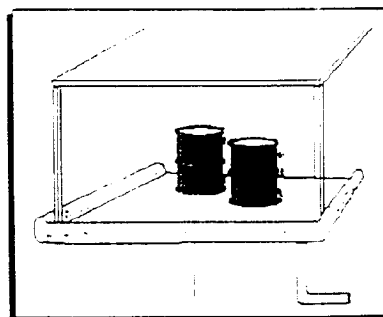
Impervious surface

Permanently installed tanks surrounded by dike system

Figure IV-4.8 Secondary Containment System



Container completely encloses storage tank



The dike shall provide a volume that is the greater of either 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank.

Covered, designated area

Figure IV-4.9 Covered and Bermed Containment Area

## IV-4.5 BMP SI.50

CONTAINER STORAGE OF LIQUIDS, FOOD WASTES  
OR DANGEROUS WASTES

A container is any portable device in which material is stored. These practices apply to container(s) located outside a building used to temporarily store accumulated food wastes, vegetable or animal grease, used oil, liquid feedstock or cleaning chemical, or Dangerous Wastes (liquid or solid) unless the business is permitted by Ecology to store the wastes (R.4 in Chapter IV-5).

- Containers used to store Dangerous Waste, food waste, or other liquids shall be kept inside a building unless this is impracticable due to site constraints or Uniform Fire Code requirements. If the containers are placed outside, the requirements of this BMP must be met.
- Dumpsters used to store items awaiting transfer to a landfill (such as used oil filters) shall be placed in a lean-to structure. Dumpsters shall be in good condition without corrosion or leaky seams. See below for the exact requirements.
- If waste container drums are stored above ground, they shall be kept in an area such as a service bay. If drums are kept outside, they must be stored in a lean-to type structure to keep rainfall from reaching the drums. See below for the exact requirements.
- Garbage dumpsters shall be replaced if they are deteriorating to the point where leakage is occurring. They shall be kept under cover to prevent the entry of stormwater (see below).

Storage of reactive, ignitable, or flammable liquids must comply with the Uniform Fire Code (R.2 in Chapter IV-5). The following practices shall complement, not conflict, with current Uniform Fire Code requirements.

1. Containers shall be located in a designated area.
2. The designated area shall be paved, free of cracks and gaps and impervious in order to contain leaks and spills.
3. For liquid wastes, tanks shall be surrounded by dikes as illustrated in Figure IV-4.9. The dike shall be of sufficient height to provide a volume that is the greater of either 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank.
4. The designated area shall be covered (see Figure IV-4.9).
5. The area inside the curb shall slope to a drain. If the material being stored is controlled by the Uniform Fire Code, or is used oil or Dangerous Waste a dead-end sump shall be installed.

For all other liquids the drain shall be tied to the sanitary sewer if available. Otherwise, process treatment or a dead-end sump shall be used subject to local Sewer Authority or permit requirements. The drain must have positive control (for example, a locked drainage valve or plug) to prevent release of contaminated liquids.

6. If the business is using roll-containers (for example, dumpsters) that are picked up directly by the collection truck, a filet can be placed on both sides of the curb to facilitate moving the dumpster.
7. Businesses accumulating Dangerous Wastes that do not contain free liquids need not carry out items #3 through #5 above if the designated area is sloped and

- the containers are elevated or otherwise protected from storm water run-on.
8. Where material is temporarily stored in drums, a containment system can be used as illustrated, in lieu of the above system (see Figure IV-4.10). If a tank is to be located in an area where firearms may be discharged, concrete encapsulation (or equivalent) should be used to protect the inner tank.
  9. Containers mounted for direct removal of a liquid chemical for use by employees must be placed inside a containment area as described above. A drip pan shall be used at all times (see Figure IV-4.11).
  10. Drums stored in an area where unauthorized persons may gain access must be secured in a manner that prevents accidental spillage, pilferage or any unauthorized use (see Figure IV-4.12).
  11. If the material is a Dangerous Waste, the business owner shall comply with any additional Ecology requirements (See R.3 in Chapter IV-5) not presented above.
  12. If a storage area is to be used on-site for less than 30 days, a portable secondary system like that shown in Figure IV-4.10 can be used in lieu of a permanent system as described above.
  13. An employee trained in emergency spill cleanup procedures shall be present when Dangerous Wastes, liquid chemicals or other wastes are loaded or unloaded (see BMP S1.80).

Figure IV-4.10  
Temporary Drum Containment  
System

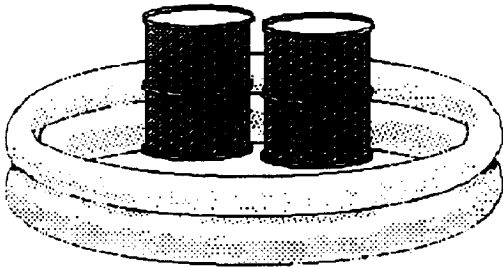
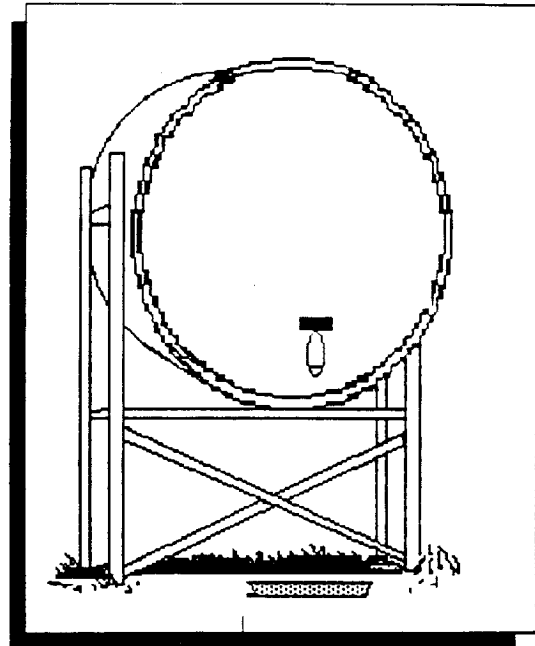
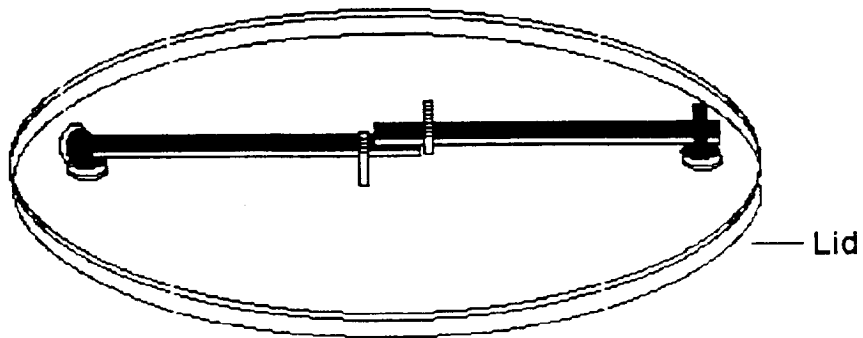


Figure IV-4.11  
Mounted Container With  
Drip Pan



Mounted  
container  
with drip pan



Lid

Figure IV-4.12  
Locking System for Drum Lid

**IV-4.6 BMP B1.60 OUTSIDE STORAGE OF RAW MATERIALS, BY-PRODUCTS  
OR FINISHED PRODUCTS**

If the raw material, by-product or product is a liquid see the previous BMP. This section covers solid material.

This BMP is for:

1. Material such as gravel, sand, topsoil, compost, logs, sawdust, wood chips;
2. Lumber and other building materials;
3. Concrete and metal products.

The business shall select one of the following practices appropriate to the type of material:

1. Build a covered area as shown in Figure IV-4.13. The area upon which the materials is stored shall be paved or;
2. Place temporary plastic sheeting over the material as illustrated (see Figure IV-4.14) or;
3. Pave the area and install a drainage system. Stormwater from the area shall be treated using one of the treatment systems presented in Volume III, Runoff Control. This is the preferred option for log storage.

With Option #3, the paved area shall be sloped in a manner that minimizes the pooling of water on the site, particularly with materials that may leach pollutants into stormwater and/or ground water such as compost, logs and wood chips. A minimum slope of 1.5 percent is recommended. Curbing shall be placed along the perimeter of the area to prevent the run-on of uncontaminated stormwater from adjacent areas as well as runoff of stormwater from the stockpile area.

The storm drainage system shall be designed to minimize the use of catchbasins in the interior of the area, as they tend to rapidly fill with the manufacturing material. Rather, the area should be sloped to drain stormwater to the perimeter where it can be collected, or to internal drainage "alleyways" where material is not stockpiled.



Figure IV-4.13 Covered Storage Area for Raw Materials

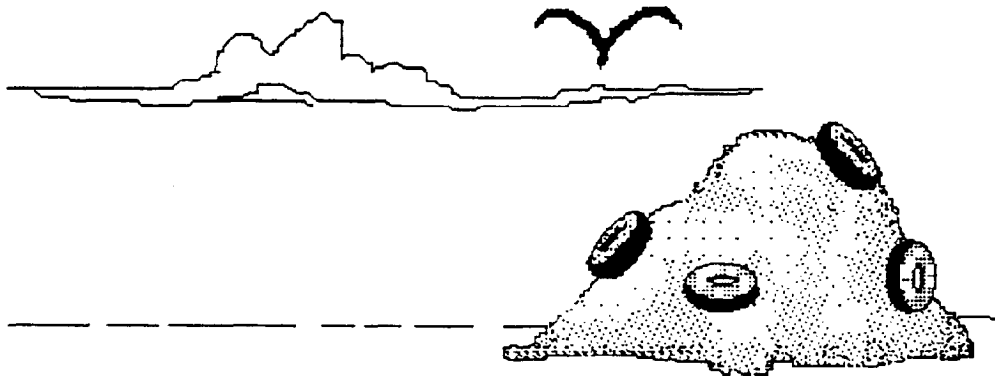
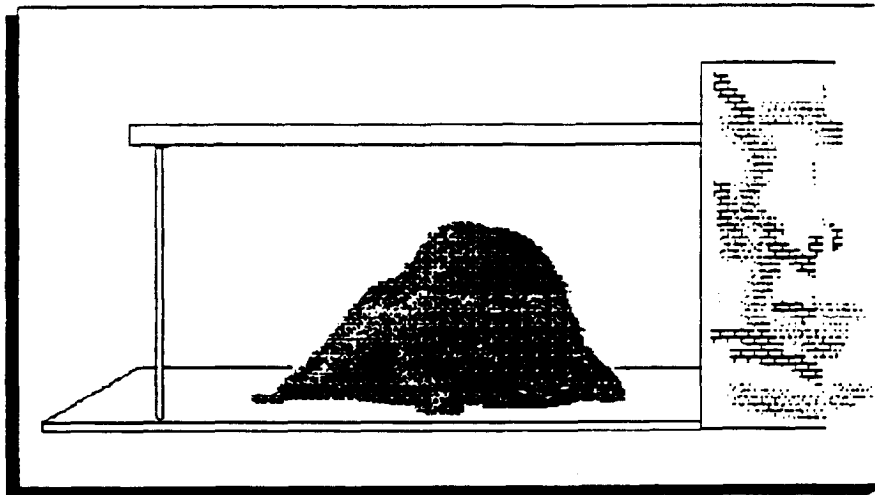


Figure IV-4.14 Material Covered with Plastic Sheeting

#### IV-4.7 BMP S1.70 OUTSIDE MANUFACTURING ACTIVITIES

These practices should be used by those businesses identified in Chapter IV-2 that carry out manufacturing activities in an area exposed to precipitation.

##### ALTER THE ACTIVITY

The preferred option is to alter the activity so that pollutants are no longer discharged. If altering the practice will not significantly reduce the concentration of the pollutants, further actions as described below must be taken.

##### ENCLOSE THE ACTIVITY (see Figure IV-4.14)

If possible, the manufacturing activity should be completely enclosed in a building and the floor drains connected to the sanitary sewer. The allowable concentration of pollutants is then specified by the local Sewer Authority (R.1 in Chapter IV-5). The area used may be so great as to make enclosure prohibitively expensive.

Costs of this BMP may be increased if the building code of the local jurisdiction requires a certain number of parking spaces be provided with a building even though its construction will not alter the nature of the manufacturing activity and therefore the number of employees.

##### COVER THE ACTIVITY (see Figure IV-4.15)

The cost of a building can be significantly reduced by not covering the sides, thus eliminating the need for ventilating and lighting systems. Floor drains shall be connected to the sanitary sewer.

If rejected asphalt is temporarily stored on-site before disposal, it shall be covered.

##### SEGREGATE THE ACTIVITY

Certain parts of the activity may be the worst source of pollutants. Those parts can be segregated and enclosed or covered. Their drains can then be hooked to the sanitary sewer, process treatment or a dead-end sump depending upon available methods and applicable permit requirements.

A method commonly used in large industrial complexes where much of the process equipment is exposed is to place curbing around the immediate boundary of the individual processes. The storm drains from these interior areas discharge to the process wastewater treatment system.

##### DISCHARGE OF HIGH FREQUENCY STORMS TO THE PUBLIC SANITARY SEWER

Businesses that utilize the public sanitary sewer system for their process or sanitary discharges may be able to utilize the public sewer for stormwater treatment under the following conditions.

If the segregated area is very small (less than a hundred or so square feet), the local Sewer Authority may be willing to allow the area to remain uncovered with the drain connected to the sanitary sewer (R.1 in Chapter IV-5).

It may be possible under unusual circumstances to connect a much larger area to the sanitary sewer if the rate of stormwater discharge is matched to the capacity of the sewer. This approach will be limited to a small number of industries with outside activities that produce pollutants of particular concern.

Figure IV-4.15 Enclose the Activity

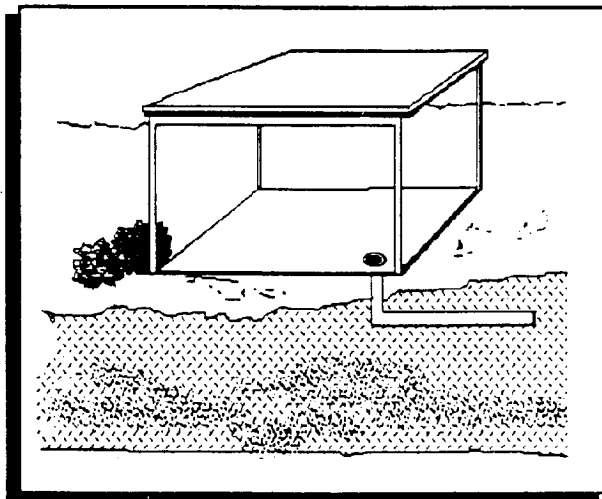
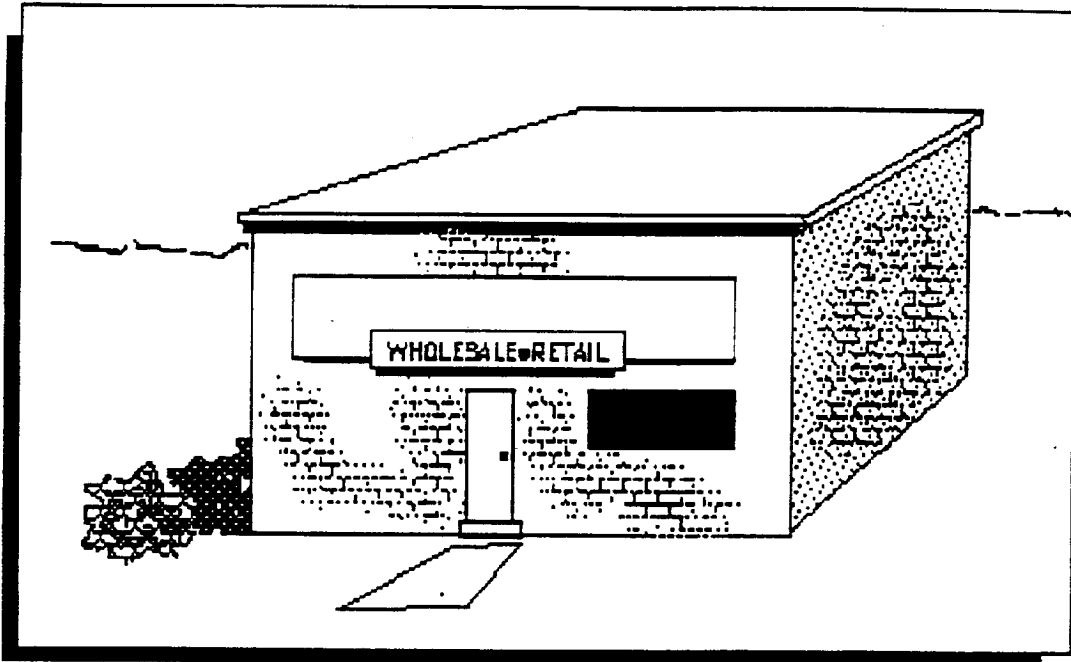


Figure IV-4.16 Cover the Activity

Since the majority of the pollutants in stormwater are discharged over time by the small, high frequency storms, the excess runoff from the infrequent large storms can be bypassed to the storm drain. To comply with the goals of this manual the sanitary sewer must have sufficient capacity to take a peak stormwater flow equivalent to the runoff of the water quality design storm (the 6-month, 24-hour storm - See Appendix AI-2.1 in Volume I). Stormwater discharge rates in excess of this value are bypassed to the storm drain.

If the sewer does not have the capacity to handle the 6-month storm peak-rate, a detention facility can be installed with a volume sufficient to reduce the peak rate to the capacity of the sewer (Volume III, Runoff Control).

Any discharge to a public sanitary sewer must meet the requirements of the local Sewer Authority (R.1 in Chapter IV-5).

To implement this BMP a hydraulic evaluation of the "downstream" sewer system shall occur in consultation with the local Sewer Authority.

#### DISCHARGE TO THE BUSINESSES' PROCESS WASTEWATER TREATMENT SYSTEM

Industries that generate large volumes of process wastewater typically have their own wastewater treatment system that discharges directly to the nearest receiving water. These industries shall have the discretion to use their own wastewater treatment system to treat stormwater within the constraints of their NPDES permit requirements for process treatment.

The industry may also choose to discharge the stormwater directly to its effluent outfall without treatment as long as the total loading of the discharge process water and stormwater does not exceed the loading had a stormwater treatment device been used. In effect, the allowable discharge of pollutants from the process wastewater treatment system is reduced. This option would be subject to permit constraints and, potentially, regular monitoring.

#### STORMWATER TREATMENT

If none of the above BMPs can be implemented then one of the treatment methods presented in the Runoff Control Volume shall be installed.

**King County  
International Airport**  
Department of Public Works  
P.O. Box 80245  
Seattle, Washington 98108  
(206) 296-7380 FAX (206) 296-0190

Galvin Flying Service, Jeff Morse  
Ameriflight, Rod Fichter  
Flightcraft, Chuck Kegley  
Boeing Company, Robin Chalmers

October 19, 1993

Subject: Aircraft Deicing

Dear Airport Tenant:

As you may be aware, recent storm water regulations are drawing attention to the practice of aircraft deicing. Our use of deicing chemicals may have to be controlled in the near future to comply with the Department of Ecology regulations.

To help us quantify the extent of the Airport's deicing activity please provide me with the following information:

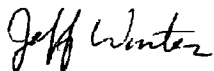
1. Quantity and type of deicing chemicals used per year for the last five (5) years if available (or average use).
2. Frequency of use per year and size of aircraft serviced.
3. Quantity and type of deicing chemicals in stock.
4. Normal procedures for deicing.
5. Containment/recycling efforts now being used or that you plan to do in the next five (5) years.

This information may help us delay costly measures if we can show our impact is insignificant compared to SeaTac Airport.

Please send this information to me by November 1, 1993.

Thank you for your cooperation. If you have any questions please call me at 296-7380.

Sincerely yours,



Jeffrey W. Winter, P.E.  
Airport Engineer

cc: Jack Frazelle, Interim Airport Manager

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